

NEW NAMES AND RECORDS IN BRICKELLIA (COMPOSITAE)

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Field and herbarium studies in *Brickellia* have led to the recognition of the following new species and varieties from Texas and adjacent Mexico. Two species are reported for the first time as occurring in Texas.

BRICKELLIA laccafa Flyr, sp. nov.

B. argutae ut videtur affinis, differt foliis brevioribus vernicosissimis grosse dentatis, involucri squamis numerosioribus angustioribusque, quarum exterioribus apice manifeste attenuatis.

Shrubby cliff-dwelling plants 2.5 dm. or less in height, oppositely and rather intricately branched from near the base. Older branches slender, terete, conspicuously woody, light gray, irregularly striate. Younger branches bright green or brownish, densely glandular with some glands slightly elevated. Leaves opposite, vernicose, with a petiole 1-2 mm. long, the bases cuneate, the blades ovate or somewhat rhomboid, 8-12 mm. long, 4-10 mm. wide, midveins distinct beneath and often with two lateral veins extending one-half the length of the blade, margins coarsely-toothed with 3(-5) broad, blunt to acute teeth on each side, apices acute to slightly acuminate. Heads terminating the short branches, borne on peduncles 0.5-1.5 cm. long, solitary or occasionally sub-cymose (with one or two additional short-peduncled heads arising from the axils of leaves on the same branch), closely subtended by one or two narrow bracts ca. 6 mm. long and 1 mm. or less wide, ca. 47-flowered. Involucres campanulate, 10-15 mm. high, 8-9 mm. wide, of ca. 40 linear to narrowly lanceolate vernicose bracts in several series and of more or less two types: the outer with broad cartilaginous margins and 3 green ribs, rather abruptly contracted at the apex into an attenuate greenish tip 1-5 mm. long, the inner also usually 3-ribbed but purplish on the upper half with scarious margins and apices merely acute or mucronate. Corollas straw-colored below, reddish-brown above, glabrous, very slender, widest at or just below the middle, somewhat contracted near the summit, with blunt nearly linear teeth 0.3 mm. long. Style branches with reddish-brown tips, exerted 1 mm. or less. Achenes dark brown at maturity, cylindrical, 4.3-4.6 mm. long, 10-ribbed, glabrous or hirsutulous (mostly along the ribs). Pappus of ca. 20 white scabrous bristles in one series, 8.0 mm. in length.

MEXICO: northern Coahuila, cliffs of Georgetown limestone, near Aguachile Mountain, 29°18' N, 102°20' W., *Flyr 1133*, August 28, 1966. Holotype: SMU; isotypes: TEX, NY, GH. Known only from the type collection.

In Robinson's (1917) monograph of the genus, *B. laccata* would be placed in Section *Brickellia* (*Eubrickellia* of Robinson) because of its large heads, and my diagnosis contrasts it to *B. arguta* Rob., one of only two species in that section (the other being *B. atractyloides* Gray) to which it bears even a faint resemblance. It is actually quite closely related to *B. glutinosa* Gray of Section *Bulbostylis*, agreeing in the varnished coating and many details of the habit but differing from the latter by its large heads and in the shape and dentation of the leaves. *B. glutinosa* occurs near the Coahuila-Durango border just south of Torreon and like *B. laccata* apparently exists in small populations in a few localities; the two species have most likely evolved through isolation after break-up of a once continuous area of Cretaceous rocks in northern Mexico.

Brickellia laccata might be expected to occur in Texas, since the type locality is only about twenty miles from the Rio Grande and the plant was found growing with the unusual cliff-dwelling *Cirsium turneri* Warnock, which occurs in a few localities near the Rio Grande in Texas.
BRICKELLIA viejensis Flyr, sp. nov.

B. nelsonii affinis, differt caulibus virellis non brunneis, foliis longioribus subcoriaceis conspicue nervis basi subobliquis, petiolis brevioribus, pedunculis crassioribus.

Perennial herb (root not seen) ca. 6 dm. tall. Stems simple, greenish, somewhat furrowed longitudinally, rather densely fine-pubescent; internodes ca. 5 cm. long. Leaves subopposite, with a petiole 4-10 mm. long, the bases somewhat oblique, the blades 6.1-7.5 cm. long, 3.0-4.5 cm. wide, ovate, subcoriaceous and prominently-veined beneath, the midvein and two lateral veins joined near but not at the base, pubescent especially along the veins, inconspicuously glandular-punctate, the margins coarsely serrate, the apices acute; each axil bearing a small lanceolate or lance-oblong secondary leaf. Inflorescence a few-headed open panicle, the heads ca. 14 mm. high, 6-7 mm. wide, borne on rather thick densely hispid peduncles. Involucre of ca. 18 linear bracts with acute apices, the outer pilose near the margin; florets ca. 14. Corollas 6 mm. long, with a slender tube and narrow but distinct limb. Achenes 4 mm. long, 10-ribbed, with appressed tawny pubescence. Pappus of ca. 30 subequal scabrous bristles, 7-8 mm. long.

TEXAS: Presidio Co., Knox Canyon, Tierra Vieja Mts., L. C. Hinckley 2024, July 20, 1941. Holotype: US. Known only from this collection.

This new species, quite unlike any other *Brickellia* from Texas or northwestern Mexico, is related to *B. nelsonii* Rob. of Nuevo Leon and Tamaulipas. It differs from the latter, in addition to the characters mentioned in the diagnosis, by its slightly larger heads, generally coarse aspect, and by the divergence of the three main leaf veins above (instead of at) the base of the blade. Though known from a single collection, I am giving it formal recognition because of these several differ-

ences. The Sierra Tierra Vieja is still not well-collected, and across the Rio Grande in Chihuahua is an area of considerable size even less well known.

BRICKELLIA shineri M. E. Jones ex Flyr, sp. nov.

Species achaeniis 5-angulatis sicut in genere Eupatorio, sed Brickelliae speciebus multis convenit phyllariis viridescentibus longitudine striatis pluriseriatis, corollae angustae dentibus inconspicuis erectis. A Brickelliae speciebus aliis distinguenda petiolis anguste alatis, pubescentia glanduloso-stipitata et phyllariis subulatis.

Holotype (POM): *M. E. Jones* 29411, March 25, 1932, Ojo de Agua, about 2½ miles from Sabinas Hidalgo, Nuevo Leon, MEXICO. (Correct locality and date from Blake, *Contr. U. S. Nat. Herb.* 29(2):117-137. 1945.)

Brickellia shineri M. E. Jones, *Contr. West. Bot.* 18:22. 1935, without Latin diagnosis.

Eupatorium parryi Gray, in *Torr. Bot. Mex. Bound.* 75. 1859. Not *Brickellia parryi* Gray, *Proc. Am. Acad.* 15:31. 1879.

The diagnostic characters of petiole, pubescence and involucre bracts are not to be taken individually but in combination for separating *B. shineri* from its congeners. The 5-angled achenes will distinguish the species from all but *B. fendleri*, in which 5-10 ribs may be found on the 5-angled fruit. The merely obtuse or acute involucre bracts of *B. fendleri*, however, as well as its broad involucre set it apart from *B. shineri*, in which the bracts are contracted at the apex to needle-like points and the involucre is about twice as high as wide.

Treatment of this taxon as a species of *Brickellia* at once erases the traditional character—number of angles and ribs on the achene—used in separating two genera with a total of several hundred species, although uncertainty as to the proper placement of *B. fendleri* by Gray was evidence that a single character could not be employed in separating *Brickellia* and *Eupatorium*. I do not favor merging the genera but expect that a combination of morphological features, as adumbrated in the diagnosis above, will distinguish the two genera without isolating any species from its closest relatives, as I believe has been done in the past with *B. shineri*.

BRICKELLIA BRACHYPHYLLA (Gray) Gray var. **terlinguensis** Flyr, var. nov.

Varietas ab brachyphylla differt capitulis grandioribus, caulibus dense glandiferis, foliis angustioribus crassioribusque.

This variety has been collected from the slopes of the Chisos Mountains northwest to the Eagle Mountains in Hudspeth County. The varietal epithet is taken from the much-publicized Brewster County ghost town of Terlingua, where the plant has been collected (*Warnock* 20991, August 31, 1937: TEX, LL). I take as type a collection of Mary S. Young

from the Chisos Mountains, Brewster County, August 7, 1915 (Holotype: TEX; isotype probably at MO).

BRICKELLIA BRACHYPHYLLA var. **hinckleyi** (Standl.) Flyr, comb. nov.

Brickellia hinckleyi Standl. Field Mus. Publ. Bot. 22(1):61. 1940.

This plant has been collected only in a small area on the north slope of Mount Livermore in the Davis Mountains. In addition to the type, I have seen the following collection: *Warnock 7385*, September 11, 1947 (TEX, LL). The large heads and stipitate glandular pubescence set it apart from var. *brachyphylla*. The heads are also larger than in the preceding variety, which differs further in its smaller, narrower and more coriaceous leaves as well as being more densely glandular than var. *hinckleyi*.

Standley apparently overlooked the obvious similarities of this taxon to *B. brachyphylla*, although the relationship cuts across sectional lines established by Robinson (1917).

BRICKELLIA VENOSA (Woot. & Standl.) Rob.

Not previously reported from Texas. It has been collected only in El Paso County: "east lower slope along the arroyos of the Franklin Mountains; about eight miles from El Paso toward the White Sands. Altitude 4600 feet", *Warnock 14231*, September 29, 1956 (LL). Otherwise, the species occurs in New Mexico and Arizona as well as the Mexican states of Sonora and Chihuahua. A closely related species, *B. oliganthes* (Less.) Gray, has been reported by Sperry (1938) as occurring in the Chisos Mountains, Brewster County, but all specimens I have seen so-labeled are either *B. cylindracea* Gray & Engelm. or *B. conduplicata* (Rob.)Rob.

BRICKELLIA CONDUPLICATA (Rob.)Rob.

This species has not been included in any of the checklists of Texas plants even though Robinson (1917) discussed a plant, collected by Harvard in the Sierra Tierra Vieja of Presidio County, which he provisionally referred to *B. conduplicata*. The short-petioled leaves on this specimen could have placed it in *B. cylindracea* Gray & Engelm. I have seen the Harvard collection (GH, US) and like Robinson cannot identify it positively. Considering the wide variation of leaf form in *B. cylindracea*, *B. conduplicata* may have to be treated as a synonym of the other species, although plants from southern Brewster and Presidio counties seem to have longer petioles, more broadly ovate leaves and less dense inflorescences than in other parts of the range of *B. cylindracea*. The obvious difference of conduplicate versus flat leaf blade is mostly an artifact of pressing. Both configurations occur in the same population: those appearing conduplicate in dried specimens are actually blades whose halves make an angle of about 150° in the living plant.

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